CHEMCEED

1720 Prosperity Court
Chippewa Falls, WI 54729

Ph: (715)726-2300
Fax: (715)726-2314

SAFETY DATA SHEET

REVISED DATE: 9/11/2018

Section 1: IDENTIFICATION

PRODUCT:	NMP
SYNONYMS:	1-methyl-2-pyrrolidone
RECOMMENDED USE:	Cleaning solutions. Solvent. Coatings Laboratory chemicals. Processing aid. Agrochemicals. Functional fluids. Road and construction applications.
SUPPLIER:	ChemCeed LLC 1720 Prosperity Court Chippewa Falls, WI 54729
GENERAL INFORMATION:	715-726-2300
EMERGENCY INFORMATION:	CHEMTREC 800-424-9300

Section 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

GHS Classification:

Classification (29CFR1910.1200 Appendix A):
Flammable liquids: Category 4
Skin irritation: Category 2
Eye irritation: Category 2A
Reproductive toxicity: Category 1B
Specific target organ systemic toxicity - single exposure: Category 3 (respiratory tract irritation)

GHS Physical Hazard:

Not Listed

GHS Health Hazard:

Not Listed

GHS Environmental Hazard:

Not Listed

GHS Labeling

Symbol:
Signal Word: Danger
Hazard Statements:
H227 Combustible liquid.
H315 Causes skin irritation.
H318 Causes serious eye irritation.
H335 May cause respiratory irritation.
H360 May damage fertility or the unborn child.
Precautionary Statements:
Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P282 Wear protective gloves/ protective clothing/ eye protection/ face protection**.**
Response:
P302 + P350: IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 +P313 IF exposed or concerned: Get medical advice/ attention.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P361 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical, or alcohol-resistant foam to extinguish.
Storage:
P404 + P233 Store in a well-ventilated place. Keep container tightly closed.
P404 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

HAZARD	HMIS	NFPA
Toxicity	2	2
Fire	2	2
Reactivity	0	0

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS

No.	Component CAS REG.NO.	Amount %	OSHA		ACGIH	
			TWA	STEL	TWA	STEL
1	METHYL-N 2-PYRROLIDONE 872-50-4	100	-	-	-	-

Section 4: FIRST AID MEASURES

Emergency first aid procedures by route of exposure:

Move out of dangerous area. Call a POISON CENTRE or doctor/physician if exposed or you feel unwell. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.

Inhalation: Move to fresh air. If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.

Ingestion: Obtain medical attention. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Skin: Remove contaminated clothing. If irritation develops, get medical attention. If on skin, rinse well with water. Wash contaminated clothing before re-use. If on clothes, remove clothes.

Eyes: Immediately flush eye(s) with plenty of water for at least 15 minutes. Remove contact lenses and continue rinsing. Protect unharmed eye.

Most important symptoms and effects, both acute and delayed: Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include stomach or intestinal upset (nausea, vomiting, diarrhea) irritation (nose, throat, airways) confusion Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May damage fertility or the unborn child. Symptoms may be delayed.

Notes to Physician: No hazards which require special first aid measures.

Section 5: FIRE FIGHTING MEASURES

Flash Point: 196 °F / 91 °C

Auto-ignition Temperature: Not Listed

Lower Explosion Limit: Not Listed

Upper Explosion Limit: Not Listed

Flammability Classification: Not Listed

Suitable Extinguishing Media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray, foam, carbon dioxide (CO2), dry chemical powder. Unsuitable extinguishing media: High volume water jet.

Specific Hazards Arising from the Chemical: The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures. During fire, gases hazardous to health may be formed. Combustion products may include carbon oxides, nitrogen oxides.

Products of Combustion: carbon dioxide and carbon monoxide Hydrocarbons Nitrogen oxides (NOx)

Fire Fighting Equipment/Instructions: If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames, and ignition sources at locations near the point of release. Do not allow run-off from firefighting to enter drains or water courses. Product is compatible with standard fire-fighting agents. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Use a water spray to cool fully closed containers. In the event of fire, wear self-contained breathing apparatus.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Protection: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and

clothing during clean-up. Avoid breathing mist/vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Environmental Precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Method for Containment: Contain spillage, and then collect with non-combustible absorbent material, (e.g., sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.
Method for Clean-up: Comply with all applicable federal, state, and local regulations. Suppress (knock down) gases/vapors/mists with a water spray jet.

Section 7: HANDLING AND STORAGE

Handling: Avoid formation of aerosol. Provide sufficient air exchange and/or exhaust in work rooms. Do not breathe vapors/dust. Do not smoke. Container hazardous when empty. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Smoking, eating, and drinking should be prohibited in the application area. For personal protection see section 8. Dispose of rinse water in accordance with local and national regulations. Pregnant or breastfeeding women must not handle this product.

Storage: Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. No smoking. Electrical installations / working materials must comply with the technological safety standards.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:
Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Components with Workplace Control Parameters:

Components	CAS-No.	Value type (Form of Exposure)	Control Parameters/Permissible concentration	Basis
METHYL-N 2-PYRROLIDONE	872-50-4	TWA	10 ppm 40 mg/m3	WEEL

Biological Occupational Exposure Limits

Components	CAS-No.	Control Parameters	Biological Specimen	Sampling Time	Permissible Concentration	Basis
METHYL-N 2-PYRROLIDONE	872-50-4	5-Hydroxy-N-methyl-2-pyrrolidone	Urine	End of Shift	100 mg/l	

Exposure Guidelines:
US – California OELs: Skin designation
n-Methyl-2-pyrrolidone (CAS 872-50-4) can be absorbed through the skin.
US WEEL Guides: Skin designation
n-Methyl-2-pyrrolidone (CAS 872-50-4) can be absorbed through the skin.

Personal Protective Equipment (PPE):
Hygiene Measures: Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Respiratory Protection: In the case of vapor formation use a respirator with an approved filter. A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.
Eye/Face Protection: Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor, or mist.
Hand Protection: Material: butyl-rubber Nitrile rubber. Remarks: The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Body: Wear as appropriate: impervious clothing Safety Shoes Choose body protection according to the amount and concentration of the dangerous substance at the workplace. Discard gloves that show tears, pinholes, or signs of wear. Wear resistant gloves (consult your safety equipment supplier).
Thermal Hazards: Wear appropriate thermal protective clothing, when necessary.
Other Protective Equipment: Not Listed

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid. Clear.
Odor: Mild, amine-like
Odor Threshold: Not Listed
pH: 7.7 - 8
Melting Point/Freezing Point: -11.2 °F / -24 °C
Initial Boiling Point and Boiling Range: 177.8 – 179.6 °F (81 – 82 °C) at 13 hPa
Flash Point: 186.8 °F / 86 °C (closed cup), 204.8 °F / 96 °C (open cup)
Evaporation Rate: Not Listed
Flammability: Not Listed
Upper/lower Flammability or Explosive Limit: 1.3 % v/v, 9.5 % v/v
Vapor Pressure: 0.39 – 0.43 hPa (20 °C)
Vapor Density: 3.42 (air = 1)
Density: 1.028 g/cm3 (25 °C)
Solubility: Not Listed
Partition Coefficient: log Pow: -0.46
Auto-ignition Temperature: 655 °F (346.11 °C)
Decomposition Temperature: Not Listed
Viscosity: 1.661 mPa.s (25 °C)
Specific Gravity: Not Listed

Section 10: STABILITY AND REACTIVITY

Reactivity: No decomposition if stored and applied as directed.
Chemical Stability: Stable under recommended storage conditions.
Possibility of Hazardous Reactions: Vapors may form explosive mixture with air.
Conditions to Avoid: Heat, flames, and sparks. Exposure to moisture Exposure to light.
Incompatibly Materials: Reducing agents' Strong acids strong alkalis Strong oxidizing agents. Peroxides.
Hazardous Decomposition Products: carbon dioxide and carbon monoxide Hydrocarbons nitrogen compounds

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity:
Acute oral toxicity: LD50 (Rat): 4,150 mg/kg
Acute inhalation toxicity: LC50 (Rat): > 5.1 mg/l
Exposure time: 4 h
Assessment: Not classified as acutely toxic by inhalation under GHS.
Acute dermal toxicity: LD 50 (Rabbit): 8,000 mg/kg

Corrosion/Irritation: Causes skin irritation.
Remarks: May cause skin irritation and/or dermatitis.
Result: Repeated exposure may cause skin dryness or cracking.
Components: METHYL-N 2-PYRROLIDONE:
Result: irritating

Serious Eye Damage/irritation: Causes serious eye irritation.
Remarks: Vapors may cause irritation to the eyes, respiratory system, and the skin., Causes serious eye irritation.
Components: METHYL-N 2-PYRROLIDONE:
Result: Irritation to eyes, reversing after 7 to 21 days

Respiratory or Skin Sensitization: Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.
Components: METHYL-N 2-PYRROLIDONE:
Assessment: Does not cause skin sensitization.
Result: Did not cause sensitization on laboratory animals.

Germ Cell Mutagenicity: Not classified based on available information.
Components: METHYL-N 2-PYRROLIDONE:
Genotoxicity in vitro: Remarks: In vitro tests did not show mutagenic effects
Genotoxicity in vivo:
Test Type: Micronucleus test
Test species: Mouse
Application Route: Oral
Result: negative
Test Type: chromosome aberration assay
Test species: Chinese hamster
Application Route: Oral
Result: negative

Carcinogenicity: Not classified based on available information.
Components: METHYL-N 2-PYRROLIDONE:
Species: Rat
Application Route: Oral
NOAEL: No observed adverse effect level: 678 mg/kg body weight
Species: Rat
Application Route: inhalation (dust/mist/fume)
NOAEL: No observed adverse effect level: 0.4 mg/l
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive Toxicity: May damage fertility or the unborn child.
Components: METHYL-N 2-PYRROLIDONE:
Effects on fertility:
Species: Rat
Application Route: Ingestion
Fertility: No observed adverse effect level Parent: 350
Result: Animal testing did not show any effects on fertility.
Effects on fetal development:
Species: Rat
Application Route: inhalation (dust/mist/fume)
Dose: 0,12, 0,25, 0,49 milligrams per liter

General Toxicity Maternal: No observed adverse effect concentration: 123 mg/m³
Teratogenicity: No observed adverse effect concentration F1: 494 mg/m³
Developmental Toxicity: No observed adverse effect concentration: 247 mg/m³
Species: Rat
Application Route: Oral
Dose: 0, 125, 250, 500, 750 milligrams per kilogram
General Toxicity Maternal: No observed adverse effect level: 250 mg/kg body weight
Developmental Toxicity: No observed adverse effect level F1: 125 mg/kg body weight
Species: Rat
Application Route: Dermal
Dose: 0, 75, 237, 750 milligrams per kilogram
General Toxicity Maternal: No observed adverse effect level: 237 mg/kg body weight
Teratogenicity: No observed adverse effect level F1: 237 mg/kg body weight
Developmental Toxicity: No observed adverse effect level F1: 237 mg/kg body weight
Reproductive toxicity - Assessment: Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

Specific Target Organ Toxicity (Single Exposure):
May cause respiratory irritation.
Components: METHYL-N 2-PYRROLIDONE:
Exposure routes: Inhalation
Target Organs: Nose
Assessment: May cause respiratory irritation.

Specific Target Organ Toxicity (Repeated Exposure):
Not classified based on available information.
Repeated dose toxicity
Components: METHYL-N 2-PYRROLIDONE:
Species: Rat
No observed adverse effect level: 169 mg/kg
Application Route: Ingestion
Exposure time: 90-day
Species: Rat
No observed adverse effect level: 0.5 mg/l
Application Route: Inhalation
Test atmosphere: dust/mist
Exposure time: 90-day
Species: Rabbit
No observed adverse effect level: 826 mg/kg
Application Route: Skin contact
Exposure time: 28-day

Aspiration Hazard:
Not classified based on available information. Further information
Remarks: No data available

Symptoms/Injuries After Inhalation: May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Symptoms/Injuries After Skin Contact: Causes skin irritation.
Symptoms/Injuries After Eye Contact: Causes serious eye irritation.
Symptoms/Injuries After Ingestion: May be harmful if swallowed.
Signs and Symptoms of Exposure: Not Listed
Symptoms Related to the Physical, Chemical, and Toxicological Characteristics: Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. May cause redness and pain.
Additional Information: Not Listed

Section 12: ECOLOGICAL INFORMATION

Toxicity:
Toxicity to fish:
LC50 (Lepomis macrochirus (Bluegill sunfish)): 832 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:
EC 50 (Water flea (Daphnia magna)): > 1,000 mg/l
Exposure time: 24 h

Toxicity to algae:
EC50 (Desmodesmus subspicatus (green algae)): 600 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
NOEC (Desmodesmus subspicatus (green algae)): 125 mg/l
Exposure time: 72 h
Test Type: Growth inhibition

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
NOEC (Daphnia magna (Water flea)): 12.5 mg/l
Exposure time: 21 d
End point: Reproduction Test
Test Type: semi-static test
Method: OECD Test Guideline 211

Toxicity to bacteria:
EC10 (activated sludge): 100 mg/l

Persistence and Degradability:
Components: METHYL-N 2-PYRROLIDONE:
Biodegradability:
Biodegradation: 73 %
Exposure time: 28 d
Method: OECD Test Guideline 301C
Remarks: Readily biodegradable

Bioaccumulative Potential:
Components: METHYL-N 2-PYRROLIDONE:
Bioaccumulation: Remarks: No bioaccumulation is to be expected (log Pow <= 3).
Partition coefficient: n-octanol/water: log Pow: -0.46 (25 °C)

Mobility in Soil: Not Listed
PBT and vPvB Assessment: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is considered to be very persistent and very bioaccumulating (vPvB).
Other Adverse Effects: Not Listed
Toxic to Aquatic Life: Not Listed

Section 13: DISPOSAL CONSIDERATIONS

General advice: Do not dispose of waste into sewer. Do not contaminate ponds, waterways, or ditches with chemical or used container. Send to a licensed waste management company. Dispose of in accordance with all applicable local, state, and federal regulations.

Contaminated packaging: Empty remaining contents. Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

Disposal instructions: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code: The waste code should be assigned in discussion between the user, the producer, and the waste disposal company.
Waste from residues/unused products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see Disposal instructions).

Section 14: TRANSPORT INFORMATION

DOT
UN Number: NA1993
UN Proper Shipping Name: Combustible liquid, n.o.s. (n-Methyl-2-pyrrolidone)
Transport Hazard Class: Combustible Liquid
Packing Group: III
Environmental Hazards: Not Regulated
Special Provisions: IB3, T1, T4, TP1
Packaging Exceptions: 150
Packaging Non-Bulk: 203
Packaging Bulk: 241

IMDG/IMO:
UN Number: Not Regulated
UN Proper Shipping Name: Not Regulated
Transport Hazard Class: Not Regulated
Packing Group: Not Regulated
Environmental Hazards: Not Regulated

IATA/ICAO:
UN Number: Not Regulated
UN Proper Shipping Name: Not Regulated
Transport Hazard Class: Not Regulated
Packing Group: Not Regulated
Environmental Hazards: Not Regulated

Section 15: REGULATORY INFORMATION

US Federal Regulations: This product is a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

SARA 311/312 Classified Hazard Categories
Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 Component(s)

METHYL-N 2-PYRROLIDONE	872-50-4	100.00 %

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

n-Methyl-2-pyrrolidone	872-50-4	1.0% Annual Export Notification Required

Safe Drinking Water Act (SDWA)
Contaminate candidate list

US. Massachusetts RTK – Substance List

METHYL-N 2-PYRROLIDONE 872-50-4

Pennsylvania Right to Know
METHYL-N 2-PYRROLIDONE 872-50-4 90.00 - 100.00 %

New Jersey Right To Know
METHYL-N 2-PYRROLIDONE 872-50-4 90.00 - 100.00 %

California Prop 65: WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
METHYL-N 2-PYRROLIDONE 872-50-4

The components of this product are reported in the following inventories:
TSCA: On TSCA Inventory
DSL: All components of this product are on the Canadian DSL
AICS: On the inventory, or in compliance with the inventory
ENCS: On the inventory, or in compliance with the inventory
KECI: On the inventory, or in compliance with the inventory
PICCS: On the inventory, or in compliance with the inventory
IECSC: On the inventory, or in compliance with the inventory
EINECS: On the inventory, or in compliance with the inventory
ECL: On the inventory, or in compliance with the inventory
New Zealand Inventory: On the inventory, or in compliance with the inventory
TCSI: On the inventory, or in compliance with the inventory
NZIOC: Exempt

Inventories
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

Section 16: OTHER INFORMATION

NFPA Flammable and Combustible Liquids Classification: Combustible Liquid Class IIIA

Full text of H-Statements referred to under sections 2 and 3.
H227: Combustible liquid.
H303: May be harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.